

**WHAT IS CLAIMED IS:**

1. An integrated heat spreader constructed and arranged to be adhesively affixed, with a sealant, to at least a portion of a component, comprising:
  - a body portion;
  - a lip portion substantially vertically oriented relative to the body portion; and
  - a step portion adjacent to the lip portion.
2. The integrated heat spreader of claim 1, wherein the step portion has a plurality of cutouts therein.
3. The integrated heat spreader of claim 1, wherein the step portion has a plurality of holes or bores therein.
4. The integrated heat spreader of claim 1, wherein the step portion is irregularly shaped.
5. The integrated heat spreader of claim 1, wherein the step portion is formed of copper or aluminum.
6. The integrated heat spreader of claim 1, wherein the step portion is formed of a carbon/carbon composite.
7. The integrated heat spreader of claim 1, wherein the step portion is formed of a carbon/metal composite.

8. The integrated heat spreader of claim 7, wherein the carbon/metal composite comprises a matrix fiber reinforced composite.

9. The integrated heat spreader of claim 7, wherein the carbon/metal composite comprises a carbon/copper composite.

10. The integrated heat spreader of claim 1, further comprising a coating applied to the step portion.

11. The integrated heat spreader of claim 10, wherein the coating comprises nickel.

12. The integrated heat spreader of claim 1, further comprising a plated portion integrally formed with the step portion.

13. The integrated heat spreader of claim 12, wherein the plated portion is formed of gold, silver, tin, nickel, or a metal composite.

14. The integrated heat spreader of claim 1, wherein the sealant is silicone-based or epoxy-based.

15. The integrated heat spreader of claim 1, wherein the component comprises a substrate.

16. The integrated heat spreader of claim 1, wherein the body portion comprises a substantially rectangular or square frame.

17. The integrated heat spreader of claim 1, further comprising a thermal interface material (TIM) interposing a die and the body portion, the TIM comprising one of solder, a polymer/solder composite, and a polymer.

18. An integrated heat spreader constructed and arranged to be adhesively affixed, with a sealant, to at least a portion of a component, the sealant to act as an adhesive interface between the integrated heat spreader and the component, comprising:

a body portion; and

a lip portion vertically oriented relative to the body portion, the lip portion being constructed and arranged to define a channel in a face thereof.

19. The integrated heat spreader of claim 18, wherein the channel is substantially concave.

20. A method of making an integrated heat spreader, comprising:

forming a body portion;

forming a lip portion substantially vertically oriented relative to the body portion; and

forming a step portion adjacent to the lip portion.

21. The method of claim 20, wherein the step portion has a plurality of cutouts therein.

22. The method of claim 20, wherein the step portion has a plurality of holes or bores therein.

23. The method of claim 20, wherein the step portion is irregularly shaped.

24. A method of making an integrated heat spreader, comprising:

forming a body portion; and

forming a lip portion vertically oriented relative to the body portion, wherein the lip portion defines a channel in a face thereof.

25. The method of claim 24, wherein the channel is substantially concave.

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